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ABSTRACT

This paper describes the "Problem Solving for Life" training program which trains adolescents and adults with mental retardation in skills for solving social problems. The program requires group participants to solve social problems by practicing two prerequisite skills (relaxation and positive self-statements) and four problem solving steps: (1) identification/definition of the problem; (2) identification of alternative solutions; (3) choice of the best solution; and (4) implementation of the chosen solution. Key principles underlying the program are group learning, active learning, use of natural reinforcers, repetition, relaxation, role playing, identifying emotions, visual prompts, individualized instruction, and group rules. The program also stresses transfer and maintenance of learned skills through such procedures as overlearning, stimulus variability, delayed reinforcement, fading prompts, and mediated generalization. Evaluation using verbal and role-playing measures found gains in self-knowledge, assertiveness, self-advocacy, problem solving, decision making, responsibility, determining what is important, evaluating outcomes, adjusting performance, communicating and listening, and internal locus of control. (Contains 12 references.) (DB)

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GENERALIZATION OF SOCIAL SKILLS: STRATEGIES AND RESULTS OF A TRAINING PROGRAM IN PROBLEM SOLVING SKILLS

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Generalization of Social Skills: Strategies and Results of a Training Program in Problem Solving Skills

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Thanks to the continual changes in legislation and recommended best practices, people with mental retardation have had an increasing number of opportunities to live and work in residential, educational, and vocational settings in the community. However, their social deficits have greatly contributed to their failure to consistently obtain and hold employment, gain assistance from their teachers and supervisors, and to resolve conflict with others. Greenspan and Schoultz (1981) have suggested that deficits in social behaviors of people with mental retardation are more likely to constitute the cause of employment termination, than nonsocial behaviors such as job productivity. However, it might be difficult to separate these two interrelated components of successful employment.

Research on mental retardation has shown that social skills are of utmost importance in ensuring the quality of life and the adjustment of people with mental retardation in the community and in job performance. Numerous studies have proved that the lack of appropriate social skills is a major factor contributing to the failure of persons with mental retardation in community placements. Lovett and Harris (1987) found, through a survey study of persons working closely with individuals with mental retardation, that interpersonal skills were considered significantly more important for community living than were leisure and academic skills. Table 1 provides a good example of the categories and variety of social skills presently considered important in order for persons with developmental disabilities to successfully be included in the community. Social skills have been taught and are being taught in most settings where

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persons with developmental disabilities learn, work, or live. Most public and private classrooms, sheltered workshops, supported employment services, vocational rehabilitation agencies, mental health and vocational centers have had some

Table 1.
Adaptive Social Skills

Adapted from S.J. Antonello "Social Skills Development", 1996, Allyn & Bacon, Needham Heights, MA, and from A. P. Goldstein and E. McGinnis, "Skillstreaming the adolescent", 1997, Research Press, Champain, Ill.

Basic Social Skills	Problem solving and conflict management skills	Friendship and social support
Listening skills		Making a friend
Starting a conversation	Problem solving	Keeping a friend
Maintaining a conversation	Making decisions	Giving and receiving support
Asking a question	**Asking for help**	Trusting other people
Saying thank you	Getting help for personal problems	**Personal boundaries and sexuality**
Introducing oneself	Following directions	Physical and sexual boundaries
Introducing other people	Keeping on task	Social boundaries
Giving and receiving a compliment	Giving and receiving constructive criticism	Context boundaries
Skills for Dealing with feelings	Conflicts with others	Types of relationships
Recognizing and accepting feelings	Dealing with negative gossip, teasing, and false accusations	Public, private and secret behaviors
Appropriately expressing feelings	**Skills Alternatives to aggression**	Borrowing and stealing
Understanding the feeling of others	Asking permission	Communication and personal boundaries
Dealing with anger and frustration	Sharing something	**Self-advocacy**
Expressing affection	Helping others	Knowing personal rights
Dealing with fear and anxiety	Negotiating	Advocating for personal needs and concerns
Dealing with fear and loss	Using self-control	Proactive behavior
	Standing up for your rights	Differentiating between aggressive, passive, and assertive behavior
	Responding to teasing	
	Avoiding trouble with others	
	Keeping out of conflicts	

form of programs for teaching social skills to its participants. Building a repertoire of social skills that will enable at least a minimum adaptation for living and working in the community has for a long time been part of the services offered for persons with developmental disabilities. However, as the social skills training movement in general has developed and relevant evidence of its effectiveness has accumulated, it became very apparent that the domain of generalization of skills has been grossly neglected. Generalization strategies have been included in the training only recently and measurements of the extent to which generalization of learned skills occurs have been very rare. The literature shows that both generalization across settings (transfer) and across time (maintenance) has been reported only in a very small number of instances. This situation is due mainly to early approaches to social skills training that have reflected a basic assumption about the spontaneous generalization of the learned skills. One early type of these interventions (summarized in Table 2), called "psychological inoculation"[1] purports that once a skill is learned, it will automatically produce personality changes in the learner so that he would be able to deal effectively in any social situation, whenever and wherever they might occur. Therefore, generalization measurements were not even included in these studies, the expectation being that it will happen anyway. A later type of intervention, known as the "train and hope approach," includes generalization measures after the training. Although the training itself does not incorporate any generalization-enhancing strategies, the researchers hope to find that the skills have maintained and transferred after a period has passed since the end of the intervention. These studies have integrated "follow-up" periods when researchers would measure the learned skills with the same tests or measurement tools after a period of three, six, twelve months or more has passed since the ending of the training program.

[1] A. P. Goldstein and E. McGinnis, "Skillstreaming the adolescent", 1997, Research Press, Champain, Ill., p. 171

Table 2.
Social Skills Training Approaches/Traditional Interventions
(adapted from A. P. Goldstein and E. McGinnis, "Skillstreaming the adolescent", 1997, Research Press, Champain, Ill.,

APPROACH	Common assumption of treatment intervention	Intervention	Expected Results
Psychodynamic/ psychoanalytic	The individual has within himself or herself, even if unexpressed, the effective, satisfying, or healthy behaviors whose expression is the goal of the therapy	Calling forth and *interpreting* the unconscious, material blocking, progress relevant awareness	Removing the obstacles to perform the healthy behaviors and/or replace the unhealthy ones
Humanistic/ nondirective		Providing a warm, empathic, maximally accepting *therapeutic atmosphere*	Free the client's potential for change and for normal behavior
Behavior Modification		Contingency management procedures that would *reward* for sought behaviors or their approximations	The latent and/or desirable behaviors will be more likely to reoccur

Unfortunately, in most cases, maintenance of the learned skills and their generalization to new contexts and new persons did not happen. In view of many similar findings, the researchers have lately concentrated on modifying the intervention in order to produce the desired generalization results. The necessity of developing training programs that specifically address the generalization of skills as a most important outcome by including techniques and strategies to enhance maintenance and transfer of the taught skills is increasingly recognized. The great challenge for current social skills programs is to prove that not only the training they propose is effective in teaching the needed social skills, but also that the acquired skills are going to be used in daily life situations. There are very few studies specifically tailored to evaluate the generalization of the acquired skills to similar situations, although many authors have emphasized the importance of generalization in real life situations. Whitman (1990) suggested that a "critical, defining characteristic of persons with mental retardation is not their specific adaptive behavior or cognitive deficiencies per se, which can often be quickly remedied, but their inability to use what they have learned in nontrained situations" (p.348). The "Problem Solving for

Life" training program, developed at the Clinical Center for the Study of Development and Learning, University of North Carolina art Chapel Hill, was used to teach a group of young adults with mental retardation problem solving skills. Numerous studies (Brickey, Campbell, & Browning, 1985; Chadsey-Rusch, 1992; Salzberg, Agran, & Lignugaris/Kraft, 1986) have established that the ability to cope with unexpected, emotionally charged situations is extremely important in social contexts in general, and at the workplace in particular. The "Problem Solving for Life" training program follows several well-established and effective methods of problem-solving teaching, while at the same time, introducing several modifications intended to make it more accessible to individuals with more severe impairments. The program requires the group participants to solve social problems by practicing two prerequisite skills - relaxation and positive self-statements - and four basic steps of the problem solving process: (a) identification/definition of the problem, (b) identification of alternative solutions, (c) choice of the best solution, and (d) implementation of the chosen solution. Because most problem solving programs currently available are designed for typically functioning persons or persons with mild mental retardation, one of the innovative features of this training program is that, although based on the well-known principles and steps of problem solving, it reduces and simplifies the elements that the participants have to remember so that. The research we conducted showed that even individuals with moderate and severe mental retardation were able to learn at least the first two steps of the problem solving strategy: relaxing and positive self-statements.[2] The learning of the first two steps is important by itself because being able to relax and calm yourself down before taking any action represent skills that interfere between the event and the subject's reaction. As a result, the chain leading to emotionally laden, hasty actions is broken and the person has the chance to think before acting. The *Problem Solving for*

[2] For more information about *Problem Solving Program* contact Irina Paraschiv, Ph.D., Clinical Center for the Study of Development and Learning, CB # 7255, University of North Carolina, Chapel Hill, North Carolina 27599-7255, email: iparaschiv@css.unc.edu

Life program teaches a strategy that unifies previous approaches by combining prerequisite skills such as relaxation and positive self-statements usually taught separately by other programs) with decision-making skills into a whole sequence. Learning a sequence instead of separate skills that have to be put together when the situation asks for it, makes it easier for persons with more severe impairments to remember it and to generalize it. The training program has a definite structure to be followed and a number of concepts to be taught while being flexible enough to allow for adaptations to suit various populations (autism, dually diagnosed, emotionally and behaviorally disturbed, etc.), as well as various settings (e.g., compensatory adult continuing education, sheltered workshops, high school transition programs.) The main concepts of the problem-solving program are listed in Table 3 below and they define the theoretical framework for this format of teaching

Table 3. Important concepts of "problem solving for life" program

- **Group learning**
  -Involve more students - learning by doing
  -Participants can learn by imitation
  -Role play is made possible in a more real-life situation

- **Active learning**
  -Learning by doing, active participation in every group activity

- **Natural reinforcers**
  -Experience positive consequences as a result of participation and problem solving

- **Repetition**
  -"Overlearning" with slight variations in repetition leads to better generalization

- **Relaxation**
  -Strategies to "calm down" before making any decisions when faced with a problem; relaxation is a substitute for acting impulsively

- **Role-play**
  -Make the learning opportunity as familiar as possible

- **Identifying emotions**
  -Identifying emotions is a step toward coping with difficult emotions
  -Understanding the causality between emotion and actions/experiences *both ways*.

- **Visual prompts**
  -Provide an easy way to remember the steps
  -Separate the components of problem solving
  -Help participants who have limited spoken language

- **Individualized instruction**
  -Assigning each participant tasks that he/she can do and understand

- **Group rules**
  -Generated by the participants (create a sense of group ownership)
  -Help structure the interactions during the sessions
  -Provide a good way to stop inappropriate behavior

The *Problem Solving for Life* program has generalization strategies built into it so that it maximizes the maintenance and transfer of the learned skills to daily situations. According to Goldstein and Ginnis (1997), there are specific procedures that enhance transfer and maintenance that have been proven effective when used in social skills programs. Table 4. lists the most common procedures used to program for generalization in any social skills program. The right column of the table is describing the specific procedures used in the *Problem Solving for Life* program.

Table 4.

Specific procedures for enhancing transfer and maintenance and their specific use in the *Problem Solving for Life* program

Procedures for enhancing transfer	
1. *Provision of general principles (training for general situations)*	PSFL provides learning of a general sequence, always the same to be used in all situations
2. *Overlearning (maximizing response availability)*	PSFL uses the same routine for every session; there is a specific agenda that is repeated and the steps of problem solving are repeated always in the same order
3. *Stimulus variability (training sufficient exemplars, training loosely)*	PSFL teaches the same steps in a variety of situations and with different people. The role-plays sometime take place in more realistic contexts such as the building's cafeteria where a problem is staged.
4. *Identical elements (training for recognizing common stimuli)*	All the steps of the sequence are labeled and prompted (visually and verbally) in the same way so that they can identified and performed regardless of the context or the people present.
5. Mediated generalization (self-recording, self-reinforcement, self-punishment, self-instruction)	The participants are taught how to self-instruct and self-reinforce themselves. The prompts they receive are gradually faded out so that they rely more on their own self-monitoring abilities.

Procedures for enhancing maintenance	
1. *Thin reinforcement (increase intermittency, unpredictability)*	Over the 34 sessions of the problem solving instruction, rewards in the form of applause is gradually reduced and verbal praise as well as the positive social consequences are the main reinforcers for good problem solvers.
2. *Delayed reinforcement*	
3. *Fading prompts*	The steps of the problem solving sequence are first prompted through multiple stimuli (verbal, visual), but as the participants' learning progresses, the prompts are faded for each individual step and the start of the sequence is the only one emphasized in the end.
4. *Provision of booster sessions*	After the "Problem Solving for Life" curriculum ends and the participants *graduate*, periodic (usually monthly) "booster sessions" are provided for the students together with the care staff through short re-enactment of the role-plays. Problem Solving for Life also uses graduates as teacher's aides for new problem solving groups.
5. *Prepare for real-life reinforcement* • Teaching of self-reinforcement • Teaching relapse and failure management skills • Use of graduated homework assignments	PSFL teaches self-reinforcement but still has to develop teaching strategies for relapse and failure management. Homework assignments are introduced in the training program only for the first few sessions dealing with relaxation and recognition of feelings because the group instructor did not have a valid means to monitor the participants in their living and work places.
6. *Program for reinforcement in the natural environment*	PSFL uses a generalization strategy through which real life social problems are practiced first in the classroom, then in a controlled setting where the problem is staged, and then in setting as close to the real ones a s possible. For example, if the problem is getting mad because you perceive that someone has intentionally bumped into you in the food line, the instructor is taking the role playing from the classroom to the school/workshop cafeteria and finally to a real cafeteria or fast food store. All the time the instructor has warnings and prompts ready for the student to help him use the problem solving sequence.
7. *Use of natural reinforcers* • Observe real-life settings • Identify easily reinforced behaviors • Teach reinforcement recruitment • Teach reinforcement recognition	All reinforcers given to the participants during the sessions are natural (praise, desirable outcomes to their problems, etc.) However, our study has shown that there is a secondary outcome for participating in the problem solving group: gaining self-esteem, making more friends among peers or deepening existing friendships, an improved, more satisfying communication pattern among the group members. All these are reinforcing enough to make the participants want to repeat the behaviors that led to them.

Evaluation of the generalization process

One of the most difficult tasks of the researchers is to design reliable and valid instruments to measure the outcomes of the generalization procedures. The recent emphasis on outcomes has brought new challenges to researchers measuring the effectiveness of their training programs. Social skills teaching programs are effective only if the skills learned by the participants are generalized to daily living situations. The fact that the participants have gained knowledge about the skills and can describe the behaviors required in a certain situation is not enough evidence for assuming they will also perform the behaviors when needed. Generally, assessment measures of the skills taught administered at different intervals after the training has ended - maintenance of skills (Foxx, Kyle, Faw, & Bittle, 1989 a &b,; Foxx & Faw, 1990), or to untrained situations - transfer of skills (Hughes, 1992; Hughes, Hugo, & Blatt 1996) are considered as valid evaluation of the generalization process. In our study we measured generalization of the problem skills by assessing the participants response to trained and untrained situations and the comparing the two. We employed two main assessment instruments: one predominantly verbal and one that involved role-playing a problem and reacting to a given situation. For generalization purposes, the role-playing assessment seemed closer to the real life situations than the verbal-only one. Other evaluation methods included staff interviews and informal discussions with the participants and various staff persons. These conversations were recorded immediately and then transcribed to be later submitted to qualitative analysis and interpretation.

Gains in self-determination for individuals who participated in the Problem Solving training program

The Problem Solving for Life training program was implemented with several groups of adults and adolescents with mental retardation in Compensatory Education classes,

sheltered workshops, mental health centers, or high school self-contained classrooms. The following paragraph summarizes the participants' behavioral gains categorized according to the main self-determination concepts. The behaviors of the participants were measured through pre- and post-test assessments, and interviews with the staff and group participants at the end of the training period and after one month.[3]

- **Self-knowledge and self-actualization:** participants have acquired the ability to recognize their own emotions and the events and behaviors related to these.
- **Assertiveness:** participants have become more assertive in their relationship with others, being able to state their preferences and feelings.
- **Self-advocacy:** the participants were able to speak up for themselves and state their choices even though that meant sometimes conflicts with the persons close to them.
- **Problem solving:** the participants were more able to solve problems that occurred in their daily life, with more or less support from the staff.
- **Decision making**: the staff, aware of what the consumers have learned, were more likely to encourage them to use their" problem solving steps" to make their own decisions, instead of taking those decisions for them.
- **Responsibility:** by practicing problem solving and decision making, the participants learned to think about the consequences of the solution chosen to solve their problem.
- **Determining what is important:** participants who are good problem solvers can determine what are the priorities and what are the barriers whenever a problem arises, so that they choose the best solution to achieve their goal.
- **Evaluating outcomes.** Group participants were able to choose an adaptive solution every time they were presented with a problem, even though some of them could not verbally identify the problem. The choice of good solutions proves that they were able to anticipate the consequences of their behaviors, be it only implicitly.
- **Adjusting performance**: in the problem solving training, participants consider a variety of solutions and even try them out one by one until they get the wanted results.

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[3] For information and materials about the research data contact Irina Paraschiv at the Clinical Center for the Study Development and Learning, CB # 7255, University of North Carolina, Chapel Hill, North Carolina 27599-7255, Phone: (919) 966-4846 Fax:(919) 966-2230 E-mail: iparaschiv@css.unc.edu

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- **Communicating and listening:** to be able to solve a problem efficiently you have to evaluate it carefully and to clearly communicate with other people.
- **Internal locus of control:** Through the acquisition of problem solving skills, the individual learns that he can have control over most situations (as well as over his own body.)

All the persons with disabilities should learn a strategy to cope in unexpected, difficult, confusing situations and The Problem Solving for Life" training program is applicable in a variety of settings and flexible enough to allow even people with more severe impairments to gain from it. Table 5. Shows a variety of places where such a program might benefit their consumers/students. However, without built in strategies for generalization and without maintenance and transfer data about the skills being taught, such endeavors lose effectiveness and their goal is limited.

Table 5.

APPLICABILITY OF THE "PROBLEM SOLVING FOR LIFE" PROGRAM

Settings:
-Compensatory education programs
- Mental health centers
- Vocational rehabilitation centers
- Private agencies
- Group homes
- Special education programs
- School-to-work transition programs

Populations:
- Individuals with mental retardation
- Individuals with dual diagnoses
- Individuals with autism
- Individuals with emotional and conduct disorders

Training contents:
- Academic skills
- Daily living skills
- Social skills
- Dating skills
- Making friends
- Work disagreements
- Conflict resolution, etc

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